WARMLYYOURS
RADIANT HEATING

Installation Manual for your ENVIRON II Floor Heating System

INTRODUCTION:

Thank you for purchasing the Environ II Electric Radiant Floor Heating Panel.

This manual contains IMPORTANT information regarding the safe use and installation of your Environ II panel, so please read through the entire manual carefully before you install or use your panel.

BEFORE WE GO ANY FURTHER - SOME REALLY IMPORTANT INFORMATION:

- Environ II panels are designed for installation directly under carpet and wood laminate, on top of the underlayment pad. “Floating - engineered wood” floors up to 3/8” thick are also acceptable.

- Environ II panels are NOT designed for installation under ceramic tile, natural stone or similar hard floor coverings; and MUST NOT be installed under nailed hardwood flooring. Other products are available to heat these types of floor – contact WarmlyYours.com, Inc. for more information.

- Certain types and thicknesses of underlayment pad, carpet and wood laminate are NOT compatible with Environ II panels (see pages 9,13); and we DO IMPOSE SOME RESTRICTIONS on the TYPE AND PLACEMENT OF FURNITURE items on your heated floor (see pages 7,9,12,15). To ensure your intended installation does not conflict in any way with these restrictions, please read the relevant sections in this Installation Manual carefully before installing the panels.

We want your installation to be trouble-free. If you are confronted with a problem you cannot solve, please do not hesitate to pick up the phone and call us at (**800) 875-5285**.

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WARRANTY INFORMATION

SECTION 1: GENERAL

UNDERSTANDING YOUR SYSTEM:

Environ II panels are made of a pattern of a fixed-resistance heating element, “sandwiched” between two layers of aluminium foil laminate.

This heating element is connected to a power supply cable, which exits the panel from one corner. The power lead is a three-core flexible cord, which consists of three conductors (hot, neutral and ground) which are individually insulated and held together within a gray or white, outer “sheath” to form a single cable.

Various size panels are available, all prefabricated and tested in a carefully controlled factory environment.

Available sizes are:

Heater details

Product Code	Width Feet	Length Feet	Area Sq. Feet	Power Watts	Ohms	Amperage	Volts
25-10-120	2	5	10	120.0	120.0	1.00	120
26-10-120	2	6	12	151.4	95.1	1.26	120
28-10-120	2	8	16	207.0	69.6	1.72	120
210-10-120	2	10	20	241.2	59.7	2.01	120
510-10-120	5	10	50	583.9	24.7	4.87	120
515-10-120	5	15	75	827.7	17.4	6.90	120
66-10-120	6	6	36	456.6	31.5	3.80	120
610-10-120	6	10	60	723.6	20.9	6.03	120

Product Code	Width Feet	Length Feet	Area Sq. Feet	Power Watts	Ohms	Amperage	Volts
25-10-240	2	5	10	120.0	480.0	0.50	240
26-10-240	2	6	12	151.5	380.2	0.63	240
28-10-240	2	8	16	207.3	277.8	0.86	240
210-10-240	2	10	20	241.3	238.7	1.01	240
510-10-240	5	10	50	584.3	98.6	2.43	240
515-10-240	5	15	75	872.5	66.0	3.64	240
66-10-240	6	6	36	456.9	126.1	1.90	240
610-10-240	6	10	60	670.5	85.9	3.14	240

The aluminium foil that forms the outer casing of the panel provides several advantages:

- Heat generated by the heating element wire within the panel rapidly spreads through the foil, creating a large “plate” at an even temperature. This also helps to prevent heat build up under chair and table legs, as the natural tendency of the foil is to draw heat away from a hot spot;
- It is waterproof, thus protecting all internal wiring and connections within the panel;
- It is rigid, yet still sufficiently flexible to make for ease of installation;
- It does not “ruck” or buckle when carpet is pulled or stretched over it.

The heating element is of a very special design, and uses materials carefully selected for an optimum balance of performance and safety.

- Flexibility
- Tension and compression
- Overheat protection

CONTROLLING YOUR SYSTEM:

WarmlyYours recommends that the SmartStat programmable thermostat control the Environ II heaters. The SmartStat come with a floor sensor that allows you to set your heater to the exact temperature you desire. These sophisticated units also allow you to set the time – for example one may chose to have a warm bedroom carpet first thing in the morning upon waking, the carpet does not need to remain warm during the day, but can be programmed to come on again for a few hours around bedtime!

Most wood laminate manufacturers specify that their floors should not be subjected to temperatures in excess of 84 degF. The only reliable way to achieve this is to install a temperature sensor on top of, or directly under the Environ II panel, placed under the wood laminate. Check with your laminate manufacturer or WarmlyYours to see what are their recommendations for installing electric radiant heat under their floors.

PROFESSIONAL ELECTRIC INSTALLATION:

Caution: Only a qualified person who is familiar with the construction and operation of the apparatus and the hazards involved shall install this product.

The installation of electrical systems presents risks of fire and electrical shock which can result in personal injury. Caution should always be taken to guard against each such risk. Only a qualified electrician should connect Environ II panels to the thermostat and / or to the electrical supply circuit. All such connections MUST be in accordance with the National Electrical Code and all local Codes. A carpet layer, flooring contractor or a Do-It-Yourselfer can install the panels on the floor, before the electrician connects them to a thermostat and an electrical circuit.

For USA installations: All such connections MUST be in accordance with the National Electrical Code and all local Codes.
For Canadian installations: The installation shall be made according to the provisions of Section 12 and 62 of the Canadian Electric Code Part 1 which reads:

"Rule 2-022 Renovation of Existing Installations: The inspection department may require such changes as may be necessary to be made to existing installations where, though hard usage, wear and tear, or as a result of alterations or extensions, dangerous conditions have developed."

ITEMS REQUIRED FOR SYSTEM INSTALLATION:

System components from WarmlyYours

1. The customized installation Plan (or layout)
2. If multiple mats are to be connected to one control device they must be wired in parallel
3. Control with an in-floor temperature sensor.

Double Check your Dimensions
Check and verify that your plan has the correct room dimensions. Your order consists of the exact amount of material required to complete your project. If the measurements of your space have changed, this will affect how much product is required and how it will be installed. If you have any discrepancies or questions call WarmlyYours Customer service at 800 875 5285.

Ground Fault Circuit Interrupter
GFCI or 'GFCI-breaker' indicating its capacity if not incorporated into the control device you are using. This is a built-in feature of the SmartStat Programmable Thermostat.

Digital Ohm Meter (multi-meter)
Test the foil mats before, during and after the installation. A digital meter is strongly recommended because of the precise measurements needed.

Electrical Housing Boxes/Switch Plates
All control devices except a Relay Contactor fit into a single gang box. If a double gang box is used it will need to be fitted with a single gang mud ring. We recommend a double gang box with a single gang mud ring as it provides more room to place all the wires.

Electrical Conduit
Local electrical codes often require the power leads be installed inside a metal or plastic conduit when running behind the wall from the foil mat to the control device. When using an in-floor sensor, if local code requires the low voltage wires be housed in conduit, it must be a separate conduit from the conduits used to house the power leads (high voltage).

Junction Box
If multiple foil mats are used, it can be easier to run the cold lead wires to a junction box first, and then connect the junction box to the thermostat.

Duct Tape
Tape is needed to hold the foil mats in place as the flooring is installed. Any brand of Duct tape can be used.

Off-Cuts of Cardboard or Carpet Scraps
To protect the foil mats during the installation.

THE SAFETY OF THE GFCI:

Environ II panels MUST be connected to the electrical system through a Ground Fault Circuit Interrupter (a “GFCI”). The WarmlyYours Smart-Stat incorporates a GFCI. If you are not using the SmartStat, ensure that the branch circuits that supply your panels are GFCI-protected, or, if possible, a dedicated GFCI is incorporated in each circuit supplying your panels. *This requirement is critical to the safe operation of your Environ II panel.*

NOTHING ON TOP:

Environ II panels must not be installed under cabinets or other fittings or furniture that will be permanently installed and attached to the floor. Built-in cabinets and other furniture with solid bases must not be placed over the panels. More specific details are contained in the “Restrictions on Furniture Placement” sections later in this Installation Manual.

NO OTHER HEATERS UNDERNEATH:

Environ II panels must NOT be installed on top of other in-floor radiant heating systems (for example hydronic or in-cement systems) UNLESS the other system is permanently disconnected in such a way that it cannot be inadvertently switched on while the Environ II panels are also in use. Similarly, Environ II panels must also NOT be installed on floors where radiant ceiling heating panels are used in the room directly below where the Environ II panel is installed.

NEVER IN DIRECT CONTACT WITH CEMENT:

Environ II panels must not be installed in thinset cement, or in direct contact with a cement or concrete subfloor or slab. There must always be an underlayment pad under Environ II panels.

SPECIAL LOCATIONS:

Environ II panels must ONLY be installed INDOORS, and MUST NOT be installed in “HAZARDOUS LOCATIONS” or “WET” areas, as defined in the National Electrical Code.

HOW THICK IS THE PANEL:

Environ II panels are less than 1/16” thick. The power supply cord comes in 2 sizes: 1/4” (6mm) diameter round or 9/64” x 13/32” (4mm x 10mm) flat. A section of the carpet cushion or underlayment pad is removed during installation so that the power supply cord cannot be felt under the carpet or laminate floor. Since the thickness of the panel is negligible, no allowance needs to be made for it when calculating floor levels and height differences across thresholds. When installing under laminate a channel may have to be chased into the subfloor to avoid any floor levelling problems.

TESTING

Each and every Environ II panel is subjected to careful testing before it is shipped from the factory, and is packed in a stout cardboard tube to protect it in transit. However, damage does sometimes occur in storage or transit, and sometimes during installation. We strongly recommend you test your panels:

- After unpacking them but before you install them, and
- After you have installed them but before you install the floor covering (i.e. while the panels are still exposed), and
- After installation of the carpet or wood laminate but before the thermostats are connected.

A simple test is a visual inspection to make sure there is no visible damage to the heater, and in particular to the cable component in the heater. A simple electrical inspection can be done with an ohms meter to make sure the ohms resistance is what it should be (see page 4). Ohms resistance can vary significantly depending on the ambient temperature and an allowance of +/- 15% from the norm is acceptable.

TROUBLE SHOOTING - Checking Ohm resistance and circuit continuity

CAUTION: TURN OFF ELECTRICITY BEFORE TROUBLESHOOTING SYSTEM

If the system fails to heat, make sure the GFCI (Ground Fault Circuit Interrupter) has not been tripped. If it has, find the fault and rectify. Check for continuity and resistance level with an Ohmmeter. Compare the reading with the resistance recorded on the UL label.

Make sure the breaker or fuse is delivering power to the system.

If the system fails to heat after these checks, call your installer. Be sure to tell the installer the Model Number of your system. This will be found on the UL label, generally stored for safe keeping or taped on the fuse or breaker box door.

Checking for breaks

If you have the round lead, the ohm resistance should be measured from the black wire #1 to the black wire #2 without touching the yellow-green wire, which is the ground connection. These ohm resistance measurements should come within 15% (plus or minus) of the original measurement indicated by the factory on the UL label (see page 4). When checking ohms resistance, make sure your hands do not touch the ohmmeter's probes, or that will include your internal body resistance and render the measurement inaccurate. Checking for ohm resistance between the two conductor wires assures you there is no break in the cold lead conductor and the heat resistance wire. It does not assure you that there is no electrical short in the circuit.

If you have the flat (4mm x 10mm) wire, test between the black lead and the white or red or yellow wire.

Checking for electrical short

In the construction of the Environ II heaters, the ground is the foil sheet. In some rare instances, a sharp object can puncture the foil over a heating element and pierce through the insulation of the heater wire, thereby allowing the electricity to flow to the ground through the foil sheet. If this situation occurred it would immediately trip the GFCI (Ground Fault Circuit Interrupter).

However, to check if you have a short, and you have the round lead, measure the ohms resistance between:

1. the black wire #1 and the yellow-green ground wire, and
2. between the black wire #2 and the yellow-green ground wire. If you have the flat (9/64" x 13/32", 4mm x 10mm) measure between the red or yellow or white wire and the ground wire and between the black wire and ground.

There should be no continuity between these wires and the ohms reading should be infinity (not zero). If your meter shows a particular number of ohms resistance between these wires, your heating panel has an electrical short. Take note of the ohms resistance number and call WarmlyYours at 1-800-875-5285. You will need to replace this heating panel before you continue the installation of the flooring material over the heaters.

BEFORE YOU START

NEVER CUT OR TRIM Environ II panels to fit into a space that is too small.

BE AWARE of the risk of damaging the heating panels with sharp tools, gripper rods, stretchers or seaming irons during installation.

DO NOT drop or carelessly use tools with sharp edges or points on top of the panels.

DO NOT walk on the panels more than is absolutely necessary during installation.

DO NOT drop or place heavy articles on the panels.

DO NOT use folded Environ II panels, and care should be taken not to fold or crease the panels at any time during installation.

DO NOT use Environ II panels on stairs.

DO place Environ II panels directly on top of the carpet cushion (The “carpet cushion” is also known as the “pad”, the “foam” or the “underlay”.)

DO place Environ II panels directly under the carpet.

ROLL your panel should you wish to move your it at some later stage.

Subfloor Preparation

Prepare your subfloor as you normally would for a “normal” carpet installation. Ensure the subfloor is structurally sound and secure with no movement – screw or nail down any loose areas before fitting the underlayment. The subfloor should be clean and dry.

To prevent damage to the panels, special attention should be paid to ensure that no nails, screws, staple, tacks and the like are protruding from the subfloor before the underlayment pad is installed. Beware of automatic staple guns if you use one to secure the cushion / underlayment to the subfloor. A badly installed staple that protrudes from the floor can pierce and destroy the Environ II cable and mat.

Nails, screws or staples should not be installed close to the panels and power supply cables.

Permanent fixtures, including built-in furniture and the like, must NEVER be installed on top of the panels.

It is important to keep an accurate record of where the panels are installed, to assist you (and a future owner!) to easily locate them should you undertake remodelling work in the room at some future date. Taking a few photographs during the installation process is a good idea.

COMPATIBLE CARPETS

Most modern tufted and woven carpets are compatible with Environ II panels. Polypropylene, hessian or jute secondary backings are compatible, but rubber- or foam-backed carpets are not compatible as they trap too much heat.

The carpet must be at least 1/4” thick, but not more than 1” thick.

For the technically minded, the R-value of the carpet should not be greater than 3. (A study by the Georgia Institute of Technology School of Textile Engineering, commissioned by the Carpet & Rug Institute, found that the total thickness of the carpet in inches, multiplied by 2.6, gives a good indication of the R-value of the carpet.)

COMPATIBLE CARPET CUSHIONS

Any type of carpet padding can be used as long as it has a density of 6 pounds per cubic foot. Most good quality rebounded polyurethane (rebound) and prime polyurethane are 8 pounds per cubic foot or more.

WARNING: RISK OF CARPET DISCOLORATION

The major factors affecting discoloration of a carpet are:

- the nature of the fibers,
- the type of coloring process and it's application to fibers, yarns, or fabric,
- the color range from pastels to dark colors,
- the temperature level if the heat is trapped under a high level of insulation such as a futon mattress, bean seat or a dog bed,
- the length of time the carpet is exposed to higher temperature.

In our experience, the Environ II, which is powered at approximately 10-watt/ sq.feet does not cause carpet discoloration when installed under the conditions of this Installation Manual, specifically the section "Restrictions on Furniture Placement and Precautions".

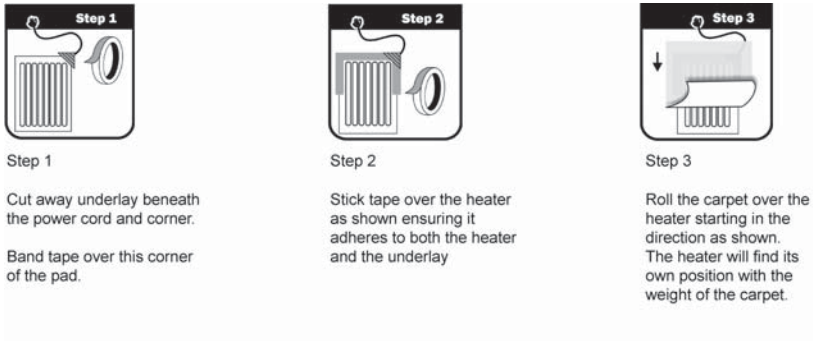
However, if excessive insulation is placed for long periods of time over a heated carpet area, some carpets of lighter colors, and lower quality will probably be the first to be subject to discoloration.

INSTALLING THE PANELS

Once the carpet cushion has been fitted in the normal manner, remove your Environ II panel from the packaging tube, unroll it completely and place it in the required position on top of the carpet cushion.
When positioning the panel on the carpet cushion, be aware of the following:

- Keep it at least 1' from any edge of the area to be carpeted, (to prevent the spikes of the power stretcher damaging the panel when the carpet is being fitted);
- Ensure the power supply cables can reach the thermostat point to which they will be connected;
- Wherever possible, run the power supply cables parallel or at right angles to the walls, and avoid high-traffic areas;
- Wherever possible, keep the corner where the power supply cable enters the panel away from high traffic areas;
- NEVER run the power supply cables under or over the panels;
- To make your installation easier, Environ II panels may be laid either side up;
- When fitting more than one panel in a room, the panels MUST NOT OVERLAP, as overheating will result.
- VERIFY the panels recieved are the correct voltage.

Smooth out the panel and adhere the heater to the underlay with adhesive tape as set out below. Any adhesive tape will do.


Step 1
Step 2
Step 3
Step 1
Cut away underlay beneath the power cord and corner.
Band tape over this corner of the pad.
Step 2
Stick tape over the heater as shown ensuring it adheres to both the heater and the underlay
Step 3
Roll the carpet over the heater starting in the direction as shown. The heater will find its own position with the weight of the carpet.

After deciding the route that your power supply cables will take from the panel to the point of supply, cut a 1/4"-wide channel in the carpet cushion along this route and drop the power supply cables into this channel. You may also need to remove a small section of carpet cushion from under the panel at the point where the power supply cord enters the panel, to prevent an unsightly lump on the carpet surface and excessive wear on that part of the panel.

Heating panels shall be installed not closer than 200 mm (8 inches) from heating supply ducts, or any other heating appliances or other source of heat. When installing two or more Environ II heating panels next to each other, the distance between the last wire on the edge of a panel, and the first wire on the edge of the next panel, has to be minimum 3" inches. The heating wires in adjacent panels cannot overlap and we recommend the use of duck tape to assure that they will not overlap over time.

INSTALLING THE THERMOSTAT

If you are using a thermostat with a floor sensor, tape the sensor to the top surface, or the bottom surface, of the Environ II heating panel, centered between two heater wires, at least 6" into the heated area. Run the sensor cable off the heater and back to the thermostat in the same channel as the power supply cords. The "heater wires" within the heater are identified as raised parallel lines, either 2" or 3" apart. The sensor wire can cross over the foil heater wires. The sensor probe must use a jacketed wire, this wire needs to be rated 80°C minimum.

Connect the sensor wire to the designated screws on the terminal block on the front of the thermostat power base. The wire must pass outside the electrical box and follow the wall down to the floor. This is a low voltage wire and in most geographical areas it does not need to be housed in a conduit. If you choose to place it in a conduit, use a separate conduit than the conduit used for the 110-volt or 220-volt wires that power the heating element.

Secure the power supply cables (and the thermostat sensor cable, where applicable) in the channel in the carpet cushion with adhesive tape, to prevent them from "riding up" onto the top surface of the carpet cushion and thus causing unsightly lumps or ridges when the carpet is fitted.

Take the cables along the edge of the carpet cushion, between the gripper and the carpet cushion to a point directly below where the thermostat will be fitted (or below the socket outlet if no thermostat is being fitted).

Remove a small section (about 1/4" to 1/2" –wide) of the gripper at a point on the floor below the thermostat and secure the cables to the floor with adhesive tape, hot-melt glue or cable clips, taking care to ensure that the cables are not damaged by the nails of the gripper.

Ensure the positioning of your Environ II panel (and the way you have routed the cables on the floor from the panel to the control point) allows sufficient cable length to reach the connection point for the electrician to make the connections.

Place Thermostat Warning Sticker to underside of thermostat's faceplate. Stickers are supplied with the Environ II mats.

Note that the power supply cables of Environ II panels are matched to the rated power of the panel. If more than one panel is connected to a thermostat, ensure that the circuit connecting the thermostat to the house power is correctly rated for the total amperage of the combined heaters. For the total amperage of your installation look to your custom design layout or your price quote. Overloaded power circuits may overheat and could start a fire!

NEVER JOIN THE POWER SUPPLY CABLES UNDER THE CARPET. NO SERIAL CONNECTIONS OF ONE PANEL TO ANOTHER PANEL. NO DAISY-CHAINS!

A QUALIFIED ELECTRICIAN MUST CONNECT THE POWER SUPPLY CABLES TO THE THERMOSTAT, AND CONNECT THE THERMOSTAT TO THE SUPPLY.

Before fitting the carpet, test the panels to ensure they are working correctly. A simple test is a visual inspection to make sure there is no visible damage to the heater, and in particular to the cable component in the heater. A simple electrical inspection can be done with an ohms meter to make sure the ohms resistance is what it should be (see page 4). Ohms resistance can vary significantly depending on the ambient temperature and an allowance of +/- 15% from the norm is acceptable. **Verify that the voltage of the panels matches the voltage specified on the plan.**

IMPORTANT POINTS FOR THE CARPET FITTER:

Please ensure that compatible carpet cushion and carpet are being fitted.

Remember that you are laying carpet over a thin electrical heating element. Extra care must be taken when working with sharp tools to avoid damage to the Environ II panel, which could cause it to malfunction and fail.

Ensure all cables have been channelled correctly into the carpet cushion to avoid unsightly lumps or an uneven carpet surface.

Do not install nails, screws or staples in direct contact with the ENVIRON II heating panels and power supply cable. A staple left protruding can destroy the ENVIRON II heater cable.

When making a join (or "seam") in the carpet, ensure that the seaming iron DOES NOT come into direct contact with the Environ II panel, as it will damage the panel. Wherever possible, avoid joins in the carpet over panels. Always use a good quality heat-bond tape, and use an ultra-wide tape when joining heavy wool or similar carpets.

Fit your carpet as normal above the panels, taking special care when working with sharp tools (power stretcher, knee-kicker, knives, scissors etc) in the vicinity of the panels and cables.

RESTRICTIONS ON FURNITURE PLACEMENT AND PRECAUTIONS IN USE:

Always remember that you have a thin electrical appliance installed directly below your carpet!

To prevent any damage to the Environ II panel, the carpet cushion, the carpet itself and anything above the carpet (including yourself!), always strictly enforce the following restrictions and precautions:

- **NEVER** pierce the carpet with sharp items such as knives, pins, tacks, staples, needles and the like;
- **NEVER** drive nails or screws through the carpet to secure furniture in position or for any other reason;
- **NEVER** drop heavy articles onto the carpet;
- Area rugs and oriental carpets may be placed on top of the heated carpet; but the total thickness of both carpets (ie the wall to wall carpet plus the rug) must never exceed 1½ inches;
- **Never** use chairs on castors directly on the carpet surface – always use a plastic “carpet protector” that is no more than ½-inch thick and does not have spikes that are long enough to penetrate the backing of the carpet and come into contact with the heater. Most commercial plastic “carpet protector” in the market will be acceptable.
- **Never** place any furniture that has feet with a “footprint” of 1/4–square inch (ie ½” x ½”) or less on the carpet, irrespective of the weight of the furniture.
- **Never** place any item with a “footprint” of 36-square inches (ie 6” x 6”) or more on the carpet, if that item is thicker than 1” (for example, do not leave a mattress, bean bag or dog bed on the carpet).
- Furniture that has feet with a footprint between ¼-square inch and 36-square inches must not exert a force greater than 100 pounds per square inch (“psi”) on the carpet surface. The psi of any piece of furniture may be determined by dividing its total weight (in pounds) by the total surface area of the parts in contact with the carpet (in square inches), eg a 150-pound sofa on which two 250-pound adults are sitting has a total weight of 650 pounds. If it has 4 feet, each 2” x 2”, the total surface contact area is 4 x (2” x 2”) = 16-square inches. 650 pounds divided by 16-sq.in. = 40 pounds per square inch.
- Any bulky item of furniture on short legs (e.g. a sofa or a bed) must have a minimum of 2-inches clearance between the top surface of the carpet and the underside of the furniture to allow free movement of air through that space. Do not allow bedclothes or drapes to restrict the **airflow under a bed!**
- **Specific items of furniture that should never be allowed onto the carpet surface:-**
  - **Pianos**
  - **Stands for hi-fi speakers that have sharp points as feet**
  - **Bookcases**
  - **Closed-bottom furniture**

SECTION 3: INSTALLATION UNDER WOOD LAMINATE:

BEFORE YOU START

Environ II panels must be fitted directly on top of the underlayment, and directly under the wood laminate flooring. (The “underlayment” is also known as the “pad”, or the “foam”.)

To avoid damage to your panels during installation, care must be taken so that tools with sharp edges or points are not dropped or used carelessly on top of the panels. Do not walk on the panels more than is absolutely necessary during installation, and do not drop or place heavy articles on the panels.

Environ II panels must not be used folded, and care should be taken not to fold or crease the panels at any time during installation. For this reason, Environ II panels are not suitable for use on stairs. Should you wish to move your panel at some later date, please remember to roll it rather than folding it.

Environ II panels MUST NEVER BE CUT OR TRIMMED TO FIT INTO A SPACE THAT IS TOO SMALL!

Prepare your subfloor as you normally would for a “normal” floating floor installation. Ensure the subfloor is structurally sound and secure with no movement – screw or nail down any loose areas before fitting the underlayment. The subfloor should be clean and dry.

To prevent damage to the panels, special attention must be paid to ensure that no nails, screws, tacks and the like are protruding from the subfloor before the underlayment pad is installed.

Nails or screws should not be installed close to the panels and power supply cables. Permanent fixtures, including built-in furniture and the like, must NEVER be installed on top of the panels. Beware of automatic staple guns if you use one to secure the pad / underlayment to the subfloor. A badly installed staple that protrudes from the floor can pierce and destroy the Environ II cable and mat.

It is important to keep an accurate record of where the panels are installed, to assist you (and a future owner) to easily locate them should you undertake remodelling work in the room at some future date. Taking a few photographs during the installation process is a good idea.

These installation instructions are NOT intended to replace or supersede the installation instructions provided by the manufacturer of the wood laminate, but to supplement them. BOTH sets of installation instructions should be complied with. In the event of any apparent contradiction between the Environ II instructions and the wood laminate instructions, kindly contact WarmlyYours.com Inc for clarity on how to proceed.

COMPATIBLE WOOD LAMINATES AND UNDERLAYMENTS

Verify that your laminate is warranted for use with radiant heat. Most modern 3/8” thick wood laminate floors are compatible with Environ II panels, but floors that have metallic strips as part of their locking systems are NOT compatible as these metallic strips may damage the Environ II panels. Also laminates that have their pad already attached to the laminate are not compatible with the Environ II panels (they are however compatible with the WarmlyYours Tempzone underfloor heating system). Contact your laminate manufacturer and WarmlyYours.com Inc, to see if your laminate is compatible.

When installing over concrete, with the 1/4” diameter, round lead, a 1/4” underlayment is mandatory. Any underlayment available in 1/4” is acceptable in most cases. Certain underlayments such as “SilentStep, Cerazorb, Quietwalk, cork, or 1/4” to 3/8” of Expanded Polystyrene (EPS) with a density of 2lbs/cu.ft. or more, are recommended for installation under Environ II heating panels. If you recieved the white, flat lead, any underlayment 5mm or thicker is acceptable. It is also acceptable to place a vapor barrier, such as a plastic sheet, under the underlayment. Underlayment papers such as “Red Bison” are not compatible with Environ II panels.

INSTALLING THE PANELS

Once the underlayment has been fitted in the normal manner, remove your Environ II panel from the packaging tube, unroll it completely and place it in the required position on top of the underlayment.

When positioning the panel on the underlayment, be aware of the following:

- Keep it at least 6 inches from any edge of the area that will be fitted with wood laminate, to prevent damage to the panel when the wood laminate is being fitted;
- Ensure the power supply cables can reach the thermostat point to which they will be connected;
- NEVER run the power supply cables under or over the panels
- To make your installation easier, Environ II panels may be laid either side up;
- When fitting more than one panel in a room, the panels MUST NOT OVERLAP, as overheating will result;

Smooth out the panel and adhere the heater to the underlay with adhesive tape as set out below. Any adhesive tape will do.

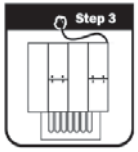
Step 1

Cut away underlay beneath the power cord and corner.

Band tape over this corner of the pad.

Step 2

Stick tape over the heater as shown ensuring it adheres to both the heater and the underlay



Step 3

install the floor boards in any direction you choose directly above the Environ II heaters. The heater will find its own position with the weight of the floor.

After deciding the route that your power supply cables will take from the panel to the point of supply, cut a 1/4”-wide channel in the underlayment and/or subfloor along this route and drop the power supply cables into this channel. You may also need to remove a small section of underlayment from under the panel at the point where the power supply cord enters the panel, to prevent a raised section under the laminate. **If the system is installed over concrete, 1/4” underlayment will be needed for clearance of the 1/4” (6mm) round otherwise, 5mm underlayment is required for the 9/64” x 13/32” (4mm x 10mm) power supply leads.**

Heating panels shall be installed not closer than 200 mm (8 inches) from heating supply ducts, or any other heating appliances or other source of heat. When installing two or more Environ II heating panels next to each other, the distance between the last wire on the edge of a panel, and the first wire on the edge of the next panel, has to be minimum 3” inches. The heating wires in adjacent panels cannot overlap and we recommend the use of duck tape to assure that they will not overlap over time.

INSTALLING THE THERMOSTAT

Thermostats with in-floor sensors must be used with all wood laminate installations, as this is the only way to restrict the Environ II panel from exceeding the temperature specified by the wood laminate manufacturers.

In choosing the location where to install the sensor, choose an area that will be representative of the floor temperature across the installation; avoid areas affected by a draft, excessive sun exposure. If your sensor is placed in an area covered by an area rug, the temperature reported by the thermostat may be higher than the floor temperature in other areas.

Tape the sensor to the top, or bottom surface of the panel in-between two heater wires, at least 6” into the heated area. Run the sensor cable off the heater and back to the thermostat in the same channel as the power supply cords. (The “heater wires” within the heater are identified as raised parallel lines, either 2” or 3” apart.)

Secure the power supply cables and the thermostat sensor cable in the channel in the underlayment cushion with adhesive tape, to prevent them from “riding up” onto the top surface of the underlayment and thus causing a ridge or lump under the laminate.

Take the cables along the edge of the underlayment, between the edge of the wall and the underlayment to a point directly below where the thermostat will be fitted.

Ensure the positioning of your Environ II panel (and the way you have routed the cables on the floor from the panel to the control point) allows sufficient cable length to reach the connection point for the electrician to make the connections.

Place Thermostat Warning Sticker to underside of thermostat's faceplate. Stickers are supplied with the Environ II mats.

Note that the power supply cables of Environ II panels are matched to the rated power of the panel. If more than one panel is connected to a thermostat, ensure that the circuit connecting the thermostat to the house power is correctly rated for the total amperage of the combined heaters.

For the total amperage of your installation, look to your custom design layout or your price quote. Overloaded power circuits may overheat and could start a fire!

NEVER JOIN THE POWER SUPPLY CABLES UNDER THE CARPET. NO SERIAL CONNECTIONS OF ONE PANEL TO ANOTHER PANEL. NO DAISY-CHAINS!

A QUALIFIED ELECTRICIAN MUST CONNECT THE POWER SUPPLY CABLES TO THE THERMOSTAT, AND CONNECT THE THERMOSTAT TO THE SUPPLY.

Before fitting the wood laminate floor, test the panels to ensure they are working correctly. Ensure supplied panels are the same voltage indicated on the plan.

IMPORTANT POINTS FOR THE WOOD LAMINATE INSTALLER:

Please ensure that compatible underlayment and wood laminate products are being fitted.

Remember that you are laying wood laminate over a thin electrical heating element. Extra care must be taken when working with sharp tools to avoid damage to the Environ II panel, which could cause it to malfunction and fail.

Ensure all cables have been channelled correctly into the underlayment and subfloor to avoid high spots under the wood laminate.

Do not install nails, screws or staples in direct contact with the ENVIRON II heating panels and power supply cable. A staple left protruding can destroy the ENVIRON II heater cable.

Do not cut wood laminate planks on top of the Environ II panels.

Fit your laminate boards as normal above the panels, taking special care when working with sharp tools (knives, scissors, saws etc) in the vicinity of the panels and cables.

RESTRICTIONS ON FURNITURE PLACEMENT AND PRECAUTIONS IN USE:

Always remember that you have a thin electrical appliance installed directly below your wood laminate floor!

To prevent any damage to the Environ II panel, the underlayment, the wood laminate itself and anything above the wood laminate (including yourself!), always strictly enforce the following restrictions and precautions:

- Never pierce the wood laminate with sharp items such as knives, pins, tacks, staples, needles and the like;
- Never drive nails or screws through the wood laminate to secure furniture in position or for any other reason;
- Area rugs and oriental carpets may be placed on top of the wood laminate; but they must not be thicker than 1-inch, and such items MUST ONLY be placed above the position of the in-floor sensor;
- Never place any item with a "footprint" of 36-square inches (ie 6" x 6") or more on the wood laminate, if that item is thicker than 1-inch (for example, do not leave a mattress, bean bag or dog bed on the wood laminate);
- Any bulky item of furniture on short legs (e.g. a sofa or a bed) must have a minimum of 2-inches clearance between the top surface of the wood laminate and the underside of the furniture to allow free movement of air through that space. Do not allow bedclothes or drapes to restrict the airflow under a bed.

WHAT TO EXPECT FROM YOUR SYSTEM:

The actual temperature rise you experience on your wood laminate surface is affected by many variables over which we have no control, including:

- Size, shape and aspect of the room (south-facing rooms tend to be naturally warmer than north-facing, etc)
- Type of subfloor (concrete floors below ground level in the basement absorb more heat than a suspended wooden floor in the attic)
- Type and thickness of underlayment: some underlayments have a higher “R-value” than others, meaning they allow less heat to pass through to the subfloor below.

Remember that the wood laminate manufacturers impose a temperature limit on the underside of their products. In our experience the laminate “absorbs” about 4 degF, so the maximum temperature on top of the laminate will be 4 degrees less than the manufacturers limit.

LIMITED WARRANTY

This **Environ II Heater** is guaranteed for a period of **5 years** from date of purchase against any fault caused by a manufacturing defect. There is no other warranty, express or implied. No claims can be brought against the manufacturer or his agents for any consequential damages whatsoever. The warranty covers the cost of repair or replacement, at the discretion of the manufacturer, of the heater only. Any costs in respect of transport, installation or labor shall be borne by the purchaser.

This warranty is further subject to the following conditions:

1. The warranty of the heater is to be registered by completing and returning the attached ‘Registration of Warranty’ form to WarmlyYours.com Inc. within thirty days of purchase. Please keep your invoice, as proof of date of purchase will be required in the event of a claim.
2. The heater is to be installed between stretched carpet or laminate flooring and underlayment with the heater unrolled completely flat. If using several heaters make sure they will not overlap each other.
3. The heater is to be electrically grounded and protected by a GFI (Ground Fault Interrupter).
4. The installation is to comply with all national and local Electrical and Building Codes as well as any other applicable statutory requirements.
5. The manufacturer hereby reserves his right to inspect the installation *in situ* at any reasonable time.
6. The warranty is not automatically transferred with change of ownership, but the manufacturer may, on application, transfer the warranty for the period remaining. This transfer is solely at the discretion of the manufacturer.

LIMITED WARRANTY continued

7. The heater should be used strictly in accordance with the following:
   a) Hard wire the unit into a 110 Volt ~ properly sized circuit. If a single thermostat controls several mats, please make sure the thermostat's amperage and the circuit's amperage are appropriate for the total electrical load of the mats.
   b) Should you feel no warmth on the carpet or laminate floor within 30 minutes, verify that there is power coming to the control or thermostat. Contact WarmlyYours.com after verifying that there is power at the plug point. Under no circumstances tamper with or attempt to repair the heater – this will render the warranty null and void.
   c) Use reasonable care in the operation of the heater. Do not drop heavy articles on the carpet, or pierce the carpet with sharp objects.
   d) Turn off the heater when shampooing carpets or if any spillage occurs to eliminate undue shrinkage. Do not turn on again until carpet, underlay and heater are all dry.
   e) To prevent possible overheating or discoloration of the carpet, do not cover the heated carpet for long periods with articles like foam mattresses, sleeper couches, pillows, etc.
   f) All restrictions and instructions in this installation manual must be complied with. If they are not complied with the warranty is void.

Environ II is a trademark of WarmlyYours.com Inc., this **Environ II** electric radiant floor heating panel is manufactured by Warmup Heating Systems, Inc. in South Africa, and distributed exclusively by WarmlyYours.com in North America, Canada and Mexico.

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